

WHAT IS CLAIMED IS:

1. A process for splicing the trailing end of an expiring running web to the leading end of a fresh running web, comprising the steps of:

advancing the leading and trailing ends in at least substantial parallelism with and next to each other at an at least substantially identical speed along a path flanked by a rotary knurling surface and a rotary countersurface; and

rotating said surfaces at different speeds through at least a majority of a plurality of revolutions, said revolutions including an n-th revolution during which the surfaces are sufficiently close to each other to splice the trailing end to the leading end in said path, n being greater than one.

2. The process of claim 1, wherein said rotating step includes maintaining the speeds of said surfaces at least close to said substantially identical speed in the course of said n-th revolution.

3. The process of claim 1, wherein n is at least close to ten revolutions.

4. The process of claim 1, wherein the ratio of said different speeds at least approximates 10:11.

5. The process of claim 1, further comprising the step of bringing one of the surfaces into contact with one of the webs in said path only in the course of said n-th revolution.

6. The process of claim 5, wherein the one surface is the knurling surface.

7. The process of claim 1, wherein said rotating step further includes rotating the surfaces at an at least substantially identical speed in the course of said n-th revolution.

8. The process of claim 1, wherein said rotating step entails the provision of at least one remnant which develops in the course of said n-th revolution and is of one piece with one of the webs, and further comprising the step of separating the at least one remnant from the spliced-together webs.

9. The process of claim 8, wherein said separating step includes moving the at least one remnant at a speed other than said at least substantially identical speed.

10. The process of claim 9, wherein said rotating step entails the provision of a remnant of the expiring web and said separating step includes reducing the speed of the remnant below said at least substantially identical speed.

11. The process of claim 10, wherein said speed reducing step includes braking the remnant of the expiring web.

12. The process of claim 9, wherein said rotating step entails the provision of a remnant of the fresh web and said separating step includes accelerating the remnant above said at least substantially identical speed.

13. The process of claim 12, wherein said accelerating step is carried out during one of the stages including (a) simultaneously with splicing of the webs to each other and (b) subsequent to the splicing.

14. A machine for splicing the trailing end of an expiring running web to the leading end of a fresh running web while the leading and trailing ends advance next to each other, in the same direction and at an at least substantially identical speed, comprising;

a rotary knurling member adjacent one side of the path;

a rotary splicing member adjacent the other side of the path at least substantially opposite said knurling member;

regulatable drive means for said rotary members;
and

means for regulating said drive means to rotate said members at different speeds through at least a majority of a plurality of revolutions, said revolutions including an n-th revolution during which said members are sufficiently close to each other to splice the trailing end to the leading end in the path, n being greater than one.

15. The machine of claim 14, wherein said knurling member has a peripheral knurling surface and said splicing member has a peripheral countersurface cooperating with said knurling surface to splice the leading and trailing ends of the webs in the path to each other in the course of said n-th revolution of said plurality of revolutions.

16. The machine of claim 15, wherein said drive means includes means for rotating said members about spaced-apart at least substantially parallel axes.

17. The machine of claim 16, wherein at least one of said members includes a segment arranged to orbit about the respective axis.

18. The machine of claim 17, wherein said means for rotating includes a roll rotatable about the respective axis and having a peripheral surface bearing said segment.

19. The machine of claim 16, wherein said means for rotating includes two rolls each rotatable about a different one of said axes, said knurling member including a first segment borne by one of said rolls and said splicing member including a second segment borne by the other of said rolls.

20. The machine of claim 19, wherein said axes are spaced apart from each other a distance which is required to ensure that said segments compress the webs in the path and thus splice the webs to each other only during said n-th revolution of said plurality of revolutions.

21. The machine of claim 14 for splicing the trailing end of an expiring running web to the leading end of a fresh running web wherein at least one of the webs includes a remnant extending beyond the spliced-together portions of the webs in the path, further comprising means for separating the remnant from the at least one web not later than upon completed splicing of the webs to each other.

22. The machine of claim 21, wherein said separating means includes means for tearing the remnant from the at least one web.

23. The machine of claim 22, wherein said means for tearing includes means for changing the speed of the remnant and of the spliced-together portions of the webs relative to each other.

24. The machine of claim 23, wherein each of said members has a knurling surface.

25. The machine of claim 23, wherein said drive means comprises a rotary roll for each of said members.

26. The machine of claim 25, wherein said rolls are rotatable about at least substantially parallel axes.

27. The machine of claim 25, wherein at least one of said rolls has a peripheral surface and the member borne by said at least one roll includes a segment provided on said peripheral surface.

28. The machine of claim 23, wherein the remnant forms a rearwardly extending part of the trailing end of the expiring web and said speed changing means includes a brake operable by said regulating means to decelerate the remnant not later than upon splicing of the leading and trailing ends of the webs to each other.

29. The machine of claim 23, wherein the remnant forms a forwardly projecting part of the leading end of the fresh web, said speed changing means including means for raising the speed of the remnant relative to the spliced-together ends of the webs.

30. The machine of claim 29, wherein said speed changing means forms part of a means for advancing the webs in said direction.